

**MITIGATION BANK USE PLAN  
COSTCO LAKE STEVENS AND & CITY OF LAKE STEVENS  
24<sup>TH</sup> STREET EXTENSION PROJECT  
NWS-**

**January 25, 2019 - Sewall Wetland Consulting, Inc.**

**For:  
Peter Kahn  
Costco Wholesale  
999 Lake Drive  
Issaquah, Washington 98027  
Bank Use Plan Outline**

**1. Project Description**

This project is located on Parcels #00457000002102, 2201, 2304, 2401, 2501 & 2502, located west of SR 9 in the City of Lake Stevens, Washington. The proposed project includes the construction of a Costco Warehouse with associated infrastructure, as well as the City of Lake Stevens extension of SE 24<sup>th</sup> Street through the site. The proposed project would fill all or part of 5 wetlands resulting in a total of 1.87 acres of wetland fill.

**2. Existing Conditions of Wetlands and Buffers**

Uplands

With the exception of two single family residences on the eastern side of the site, the majority of the site is forested with both deciduous and coniferous forest. The site contains an undulating topography with a topographic high on the northeast and a low on the southwest. The central area of the site to the north and west of the existing homes show evidence of past use as a gravel or borrow pit. Cut slopes, and obvious excavations are present in this area. Chain link fences surround portions of this area as well as dense thickets of Himalayan blackberry. An old trench like logging road type feature goes diagonally through the site, and several excavated ditches are present in the wetlands on the south end of the site.

The site is primarily forested with coniferous species (Douglas fir, western red cedar and western hemlock) with the exception of the wetlands and some alder/big leaf maple dominated areas near the center and periphery of the site. Understory species include vine maple, Indian plum, hazelnut, sword fern, salal, elderberry, stinging nettle and Himalayan and cut leaf blackberry.

Soil pits excavated throughout the upland areas of the site generally revealed a gravelly loam soil with colors ranging from 10YR 3/3-10YR 3/6 which were dry.

## Streams

Mosher Creek is present on the western side of the site and west of the proposed 24th Street road extension. Mosher Creek is a fairly pristine channel in this area with a width between OHWM of 8'-10' with a mix of sand and mud bottom substrates. No fish were observed in this stream, but as noted in The Watershed report, there are no obvious barriers to fish passage and as a result it is presumed to be fish bearing, or a Type F water. No impacts to this stream are proposed.

## Wetlands

A total of six (6) wetlands were identified in the project area and are identical to the previous delineations on the site.

Table 1. Summary of Wetland Ratings

Wetland	Water Quality	Hydrologic	Habitat	Total	Category
A	7	7	6	20	II
B	6	7	4	17	III
C	7	8	4	19	III
D	6	7	7	20	II
F	6	5	5	16	III
M	6	8	6	20	II

Below is a brief description of these wetlands;

### Wetland A

Wetland A is located on the southeast corner of the site and contains emergent, scrub shrub and forested wetland classes and is depressional in character. Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 6 for habitat. This indicates a Category II wetland.

### Wetland B

Wetland B is located on the southeast portion of the site north of Wetland A . This wetland is dominated by both forested and scrub shrub vegetation with black cottonwood, sitka and pacific willow, crabapple, vine maple and lady fern present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland B has, would have a 65' buffer for high intensity land use.

## Wetland C

Wetland C is located just north of Wetland B and is dominated by a forested wetland class containing black cottonwood, sitka and pacific willow, hardhack and reed canary grass present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 19 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland C has, would have a 65' buffer for high intensity land use.

## Wetland D

Wetland D is located on the south side of the site. This large wetland contains areas of forested, scrub shrub, emergent and aquatic bed wetland classes.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands have a buffer that ranges from 45-190 feet depending on the habitat score. Category II wetlands with a high habitat score as Wetland D has, would have a 95' buffer for high intensity land use.

## Wetland F

Wetland F is a small forested wetland located on the north end of the site.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 5 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland F has, would have a 65' buffer for high intensity land use.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a riverine wetland, this wetland scored a total of 20 points with 6 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands with a high habitat score as Wetland M has, would have a 95' buffer for high intensity land use.

### **3. Avoidance and Minimization of Wetland Impacts**

Wetland A is located within areas to be impacted by road widening of 35th and 72st avenues. These impacts cannot be avoided. Wetland B is a low value wetland somewhat supported by a failed septic system. Removal of the house and grading will most likely remove its hydrology and it appears little functional value will remain leaving this wetland.

Describe how adverse impacts, both direct and indirect, to wetlands will be avoided and

### **4. Unavoidable Wetland Impact Acreage**

A total of 1.873 acres of wetland will be filled as described in the Jarpa and Critical areas report.

**Example Table 2  
Expected Impacts to Wetlands**

<b>Wetland Identifier</b>	<b>Wetland Area (acres)</b>	<b>Permanently Filled Wetland Area (acres)</b>	<b>Temporarily Impacted Wetland Area (acres)</b>	<b>Indirect Impact Area (acres)</b>	<b>Cowardin Classification</b>	<b>Ecology Rating</b>	<b>Local Jurisdiction Rating</b>	<b>HGM Classification</b>
A		0.168	0	0	PEM,PSS,PFO	III	III	Depressional
B		0.473	0	0	PSS,PFO	III	III	Depressional
C		0.123	0	0	PFO	III	III	Depressional
D		0.908	0	0	PFO,PSS,PAB	II	II	Depressional
F		0.201	0	0	PFO	III	III	Depressional
<b>TOTALS</b>		<b>1.873</b>	<b>0</b>	<b>0</b>				

### **5. Impacted Wetland Functions**

Both wetlands are low function areas. Wetland A has some stormwater storage as roadside ditches drain into this area. All functions were low and the wetland just barely made a Category III rating (see rating forms in Critical Areas Report).

### **6. Wetland Mitigation Site Selection Rationale**

Compensatory mitigation requirements for the Bella Vista Marysville Project are intended to replace the temporary and permanent loss of aquatic resource functions caused by the project’s construction activities. The permit applicant will contract with Mitigation Banking Services LLC., which is the management representative of both the Snohomish Basin Mitigation Bank and the Skykomish Habitat Mitigation Bank. The Bella Vista Marysville project is located within the same river basin and service area (Water Resource Inventory Area 7) for both bank projects. The applicant has chosen to use credits from the Snohomish Basin Mitigation Bank (SBMB) which is located on the Snoqualmie River, in the Snoqualmie River Basin in the east half of Section 35 and the west half of Section 36, Township 27 North, Rang 6 East, in Snohomish County Washington. The principle objectives of this mitigation bank project are to (1) re-establish and enhance wetland hydrology to a large historical wetland complex along Pearson Eddy which is connected to the Snoqualmie River, (2) restore historical riverine and depressional wetland function and habitat within the wetland and stream channel system (3) re-establish habitat connectivity and fish use of the system by restoring historical stream channels and meander scars across the site, which are hydrologically connected to the Snohomish River (4) remove invasive species on the site and increase the cover and structural diversity of native wetland plant species.

As of the March 2014, the SBMB is fully constructed. The project totals approximately 200 acres of wetland, riparian and upland habitats and is adjacent to additional restoration lands, helping to create a habitat corridor and upland habitat connectivity across the Snoqualmie

Valley. The bank project is designed to improve and restore critical habitat for threatened and endangered salmonids within the river basin by reconnecting the main stem of the Snoqualmie River to off-channel rearing and refuge habitat within the bank project. The loss of floodplain connectivity is a limiting factor in this system and the SBMB provides valuable rearing habitat for juvenile coho and Chinook salmon during outmigration and high flows. Habitat types at the SBMB include forested, shrub, emergent and aquatic bed wetlands, riparian uplands and stream habitat as well as floodplain forested upland habitat.

The SBMB has met all required performance standards applicable to the project for credit release. Given the size and scope wetland restoration and location on the Snoqualmie River the Snohomish Basin Mitigation Bank is the most suitable mitigation bank for the project's compensatory mitigation requirements. Mitigation Banks are the preferred solution for implementing successful compensatory mitigation as they have financial protections and guarantees, strict agency oversight and limit or eliminate temporal loss of wetland functions. For more information about the SBMB contact:

Mitigation Banking Services LLC.

Zach Woodward  
 Project Manager  
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 Kirkland, WA 98033  
 Phone: 425.205.0279  
 Email: zach@mitigationbankingservices.com

**Confirmation of Mitigation Credit Availability**

As of August 2, 2017, the Snohomish Basin Mitigation Bank has 40.19 mitigation credits available for use and transfer. Mitigation credits are provided from the bank to an applicant's project using the suggested ratios in the table below, as approved by the USACE and Washington State Department of Ecology:

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2 to 1
Wetland, Category III	1.0 to 1
Wetland, Category IV	.85 to 1
Critical Area Buffer	1 to 1
Stream	Case by case

Proof of the current number of available mitigation credits at the SBMB site can be

confirmed by approving agency(s) through the Interagency Review Team (IRT).

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The Snohomish Basin Wetland Mitigation Bank project has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the US Army Corps of Engineers and the Washington State Department of Ecology. The site development plan for the SBMB is detailed in the bank's Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies participated in the development of the banking instrument:

- US Army Corps of Engineers, Seattle District
- US Environmental Protection Agency
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources, Aquatic Resources Division
- Snohomish County
- King County

## ***7. Wetland Functions Provided at Wetland Mitigation Bank***

### **Summary of Wetland functions provided at the SBMB:**

The table below summarizes existing wetland functions and predicts the relative extent of these functions with implementation of the Bank Project. A substantial increase in wetland function is expected to result after project completion, generally rising from low values, to moderate to high values. This “ecological lift” forms the basis for bank credits that compensate for impacts to wetlands, streams, buffers, and other resources in the service area.

**Table 2\*. Summary of Wetland Functional Assessment Under Existing Conditions Compared to Project Implementation.**

WETLAND FUNCTION	EXISTING CONDITION	WITH PROJECT IMPLEMENTATION
Groundwater Recharge	Low	Moderate to High
Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

\*Snohomish Basin Mitigation Bank MBI, July 2005

Below is a summary of wetland functions provided at the SBMB, broken down by category:

### **Hydrology**

The SBMB provides flood storage and the desynchronization of flood flows for the Snoqualmie River as well as erosion and shoreline protection through the reduction of peak flows and attenuation of storm water runoff rates to the lower Snohomish Basin. Groundwater recharge to the hyporheic zone of the Snoqualmie River occurs from slowing storm water runoff and flood flows and detaining it in the low lying riverine and depressional wetlands at the SBMB.

Additionally during high flows in the Snoqualmie River, the SBMB wetlands collect and retain sediment and reduce sediment transfer rates to the lower watershed.

### **Water quality**

The SBMB wetlands filter heavy nutrient loads, chemical contaminants and heavy metals from storm water runoff, road runoff and agriculture activities upstream from the bank site. Given the bank’s landscape position, the wetlands at the SBMB act as a natural filter for surface water flows that enter the bank site upstream and eventually exit into the Snoqualmie River and Pearson Eddy. Water quality testing conducted in June of 2009 for microbiological, demand and

nutrient loads showed a significantly reduced level of Fecal Coliform and Total Nitrogen Loads discharged from the bank site compared to samples taken from flows entering the bank site upstream and from the surrounding drainage ditches (*AmTest Laboratories SBMB project June 2009*).

## **Wildlife Habitat**

The SBMB project encompasses a large area with varying aquatic and terrestrial habitat types. Floodplain upland, aquatic bed, emergent, shrub and forested wetlands create a mosaic of habitat types and structural diversity throughout the site. Restoration activities have improved food chain support and species richness, providing habitat for fish, amphibians, mammals and birds. To illustrate the level of habitat connectivity achieved at the bank site, large mammals such as elk, deer and bear have been observed using the site as a connective corridor to their higher elevation habitat areas.

The SBMB is also providing off channel rearing and refuge for juvenile salmonids during high flows in the main stem of the Snoqualmie River. According to the 2005 Snohomish River Basin Salmon Conservation Plan, the lack of rearing and refuge habitat on the main stem of the Snoqualmie River is a limiting factor for juvenile salmonids. Fish presence surveys were conducted in 2013 to study and document what fish species are using the SBMB at different points of the year. Survey results indicate that juvenile Coho and Chinook use the bank for the majority of the year to forage and seek refuge off the mainstem of the Snoqualmie River. Additionally, cutthroat and rainbow trout were documented in the bank site presumably for the same reasons (SBMB Stream Habitat Survey Report 2013)

## **Pre and Post Construction Site Conditions**

Below is a table of existing and proposed conditions at the SBMB following construction of each phase of the bank site. Table 3 shows the area of expected wetland hydrology restored in each phase. The SBMB will restore 135.4 acres of Category II wetlands to the national wetland inventory. Table 4 shows the mix of different habitat types restored to the site from the current condition in acres and length of stream restoration in linear feet.

RESTORATION PHASE	Existing Conditions (acres)			Proposed Conditions (acres)		
	Effectively Drained Wetlands and Other Uplands	Farm Wetland	Total	Wetland	Upland	Stream and Riparian
Phase 1	36.4	4.4	40.8	21.6	19.2	0
Phase 2	96.2	18.8	115.0	99.9	15.1	0
Phase 3	41.8	1.4	43.2	32.7	8.4	2.1
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>154.2</b>	<b>42.7</b>	<b>2.1</b>

HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectivel y Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
Perimeter Buffer	0	0	0	5.9	5.3	10.8	22.0
Floodplain Upland	0	0	0	15.3	12.0	2.9	30.2
Forested Wetland	0	0	0	6.8	14.4	4.7	25.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	13.5	38.1
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	11.3	79.5
Aquatic Bed Wetland	0	0	0	0.2	3.1	0	3.3
Pasture	174.4	24.6	199.0	0	0	0	0
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>40.8</b>	<b>115.0</b>	<b>43.2</b>	<b>199.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400l f	9000lf

\*Snohomish Basin Mitigation Bank MBI 2005

### Monitoring and Reporting

Section 12.0 of the SBMB MBI details Monitoring, Reporting, and Remedial Actions including as-built reports for each phase of construction; annual monitoring reports that document the condition of the SBMB and its progress toward achieving goals, objectives, and performance

standards; monitoring of hydrology and the functioning of relocated streams and drainages; and vegetation survival monitoring. Monitoring report content and schedules are prescribed.

Specific methodology for monitoring is correlated to the various performance standards. For example, permanent monitoring wells will be used to determine presence of wetland hydrology during years 3, 5, and 7 for Performance Standard 2B. Wetland delineation will be conducted in years 7 and 10 to satisfy Performance Standard 2E. Permanent vegetation plots will be used in years 3, 5, 7, and 10 to assess plant density and percent survival to satisfy Performance Standards 4B through 4I. Methodology and reports are submitted and reviewed by the IRT. If the bank is successful in achieving its performance standards, the associated credits for those performance standards are released.

## 8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

NA

## 9. Proposed Mitigation Credits

The Snohomish Basin Mitigation Bank will provide 2.054 mitigation credits under this Bank Use Plan. Wetland mitigation is provided at a 1:1 area ratios for Category III wetlands and a 1.2:1 ratio for Category II wetlands for the project mitigation requirements. The credit calculation is as follows:

**Table 6: Mitigation Bank Credits Proposed for Use by Impact Project**

Wetland Identifier	Wetland Class	Wetland Area (acres)	Credit:impact ratio	Total Credits Required for Impact
Wetland A	III	0.168 acres	1:1	.168
Wetland B	III	0.473 acres	1:1	.473
Wetland C	III	0.123 acres	1:1	.123
Wetland D	II	0.908 acres	1.2:1	1.089
Wetland F	III	0.201 acres	1:1	.201
<b>Total</b>		<b>1.873 acres</b>		<b>2.054</b>

## 10. Credit Purchase or Transfer Timing

The applicant will enter into a Purchase Agreement with the representative of the Snohomish Basin Mitigation Bank, Mitigation Banking Services LLC., for 2.054 mitigation credits that would appropriately mitigate for the proposed project impacts. Purchase of credits will be completed prior to the applicant's construction activities occurring and as a condition of the applicant's permit issuance. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.

**REVISED MITIGATION BANK USE PLAN  
COSTCO LAKE STEVENS AND & CITY OF LAKE STEVENS  
24<sup>TH</sup> STREET EXTENSION PROJECT  
NWS-**

**September 10, 2019 - Sewall Wetland Consulting, Inc.**

**For:  
Peter Kahn  
Costco Wholesale  
999 Lake Drive  
Issaquah, Washington 98027  
Bank Use Plan Outline**

**1. Project Description**

This project is located on a 39.09 acre site including Parcels #00457000002102, 2201, 2304, 2401, 2501, 2502 & 2503, located west of SR 9 in the City of Lake Stevens, Washington. The proposed project includes the construction of a Costco Warehouse with associated infrastructure, as well as the City of Lake Stevens extension of SE 24<sup>th</sup> Street through the site and improvements to SR9 at the intersection of SR9 and Lake Stevens Road. The proposed project would fill all or part of 7 wetlands resulting in a total of 1.84 acres of wetland fill.

Wetland D is proposed to be impacted with 32,326sf (0.74 ac) of fill for the project. Due to its contribution to an off-site fish bearing stream's hydrology, a portion of the impact will be mitigated on site with creation of 42,407 sf of wetland. At a 3:1 ratio this would compensate for 14,136sf (0.32ac) of Category II wetland. The remainder of this wetland impact for Wetland D will be mitigated through credit purchase in the bank. This template reflects that portion (18,190sf, 0.42ac) to be mitigated by the bank.

**2. Existing Conditions of Wetlands and Buffers**

Uplands

With the exception of two single family residences on the eastern side of the site, the majority of the site is forested with both deciduous and coniferous forest. The site contains an undulating topography with a topographic high on the northeast and a low on the southwest. The central area of the site to the north and west of the existing homes show evidence of past use as a gravel or borrow pit. Cut slopes, and obvious excavations are present in this area. Chain link fences surround portions of this area as well as dense thickets of Himalayan blackberry. An old trench like logging road type feature goes diagonally through the site, and several excavated ditches are present in the wetlands on the south end of the site.

The site is primarily forested with coniferous species (douglas fir, western red cedar and western hemlock) with the exception of the wetlands and some alder/big leaf maple dominated areas near the center and periphery of the site. Understory species include vine maple, Indian plum, hazelnut, sword fern, salal, elderberry, stinging nettle and Himalayan and cut leaf blackberry.

Soil pits excavated throughout the upland areas of the site generally revealed a gravelly loam soil with colors ranging from 10YR 3/3-10YR 3/6 which were dry.

### Streams

Mosher Creek is present on the western side of the site and west of the proposed 24th Street road extension. Mosher Creek is a fairly pristine channel in this area with a width between OHWM of 8'-10' with a mix of sand and mud bottom substrates. No fish were observed in this stream, but as noted in The Watershed report, there are no obvious barriers to fish passage and as a result it is presumed to be a fish bearing, or Type F water. No impacts to this stream are proposed.

### Wetlands

A total of six (6) wetlands were identified in the project area and are identical to the previous delineations on the site.

**Table 1. Summary of Wetland Ratings**

<u>Wetland</u>	<u>Water Quality</u>	<u>Hydrologic</u>	<u>Habitat</u>	<u>Total</u>	<u>Category</u>
A	7	7	6	20	II
B	6	7	4	17	III
C	7	8	4	19	III
D	6	7	7	20	II
F	6	5	5	16	III
M	6	8	6	20	II
J	5	5	6	16	III
<u>Offsite</u>					
X	7	6	7	20	II
Z	8	7	6	21	II

Below is a brief description of the wetlands with proposed impacts;

### Wetland A

Wetland A is located on the southeast corner of the site and contains emergent, scrub shrub and forested wetland classes and is depressional in character. Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 6 for habitat. This indicates a Category II wetland.

## Wetland B

Wetland B is located on the southeast portion of the site north of Wetland A . This wetland is dominated by both forested and scrub shrub vegetation with black cottonwood, sitka and pacific willow, crabapple, vine maple and lady fern present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland B has, would have a 65' buffer for high intensity land use.

## Wetland C

Wetland C is located just north of Wetland B and is dominated by a forested wetland class containing black cottonwood, sitka and pacific willow, hardhack and reed canary grass present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 19 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland C has, would have a 65' buffer for high intensity land use.

## Wetland D

Wetland D is located on the south side of the site. This large wetland contains areas of forested, scrub shrub, emergent and aquatic bed wetland classes.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands have a buffer that ranges from 45-190 feet depending on the habitat score. Category II wetlands with a high habitat score as Wetland D has, would have a 95' buffer for high intensity land use.

## Wetland F

Wetland F is a small forested wetland located on the north end of the site.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 5 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland F has, would have a 65' buffer for high intensity land use.

## Wetland J

Wetland J is a portion of an old dug ditch that has developed wetland characteristics. This ditch appears to have been dug historically to drain a portion of Wetland D, but the connection to Wetland D is not wetland, just a dry ditch.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 6 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a high habitat score of 6 would have a 95’ buffer for high intensity land use.

**Wetland Z**

Wetland Z is a combination slope and depressional wetland located east of SR9 and south of Lake Stevens Road in the vicinity of the proposed SR9 road improvements. A small intermittent stream, previously identified as a Type F stream, passes through this wetland.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 22 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands with a high habitat score as Wetland M has, would have a 95’ buffer for high intensity land use.

**3. Avoidance and Minimization of Wetland Impacts**

Wetlands A, B, D and J are located within areas that will be impacted by the extension of 24<sup>th</sup> Street East and the connection of Lake Stevens Road. These impacts cannot be avoided and still extend these roads.

Portions of Wetlands B, C, D F & J are proposed to be impacted by the development of the proposed Costco and its associated parking area and infrastructure. There is no way to fit the facility on the site without impacts to these wetlands.

**4. Unavoidable Wetland Impact Acreage**

A total of 1.84 acres of wetland will be filled by this project. A total of 0.32 acres will be mitigated on site through wetland creation. In addition, off-site mitigation includes improving fish habitat through the removal/ replacement of 6 downstream culverts. This leaves a total of 1.51 acres of wetland to be mitigated through credit purchase in the bank.

**Example Table 2  
Expected Impacts to Wetlands**

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
A		0.290	0	0	PEM,PFO	II	II	Depressional
B		0.440	0	0	PSS,PFO	III	III	Depressional
C		0.200	0	0	PFO	III	III	Depressional
D		0.418	0	0	PFO,PSS,PAB	II	II	Depressional
F		0.130	0	0	PFO	III	III	Depressional
J		0.020	0	0	PSS	III	III	Depressional

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
Z		0.020	0	0	PEM, PSS, PFO	II	II	Depressional
<b>TOTALS</b>		<b>1.51</b>	<b>0</b>	<b>0</b>				

### 5. Impacted Wetland Functions

As indicated by the ratings of the site’s wetlands, functions are moderate to high depending upon the wetland impacted. Stormwater and water functions of these wetlands will be partially mitigated through the sites stormwater system. Other functions will be replaced though some on-site wetland creation as well as off-site mitigation bank purchase.

### 6. Wetland Mitigation Site Selection Rationale

Compensatory mitigation requirements for the Costco Lake Stevens Project are intended to replace the temporary and permanent loss of aquatic resource functions caused by the project’s construction activities. The permit applicant will contract with Mitigation Banking Services LLC., which is the management representative of both the Snohomish Basin Mitigation Bank and the Skykomish Habitat Mitigation Bank. The Costco Lake Stevens project is located within the same river basin and service area (Water Resource Inventory Area 7) for both bank projects. The applicant has chosen to use credits from the Snohomish Basin Mitigation Bank (SBMB) which is located on the Snoqualmie River, in the Snoqualmie River Basin in the east half of Section 35 and the west half of Section 36, Township 27 North, Range 6 East, in Snohomish County Washington. The principle objectives of this mitigation bank project are to (1) re-establish and enhance wetland hydrology to a large historical wetland complex along Pearson Eddy which is connected to the Snoqualmie River, (2) restore historical riverine and depressional wetland function and habitat within the wetland and stream channel system (3) re-establish habitat connectivity and fish use of the system by restoring historical stream channels and meander scars across the site, which are hydrologically connected to the Snohomish River (4) remove invasive species on the site and increase the cover and structural diversity of native wetland plant species.

As of the March 2014, the SBMB is fully constructed. The project totals approximately 200 acres of wetland, riparian and upland habitats and is adjacent to additional restoration lands, helping to create a habitat corridor and upland habitat connectivity across the Snoqualmie Valley. The bank project is designed to improve and restore critical habitat for threatened and endangered salmonids within the river basin by reconnecting the main stem of the Snoqualmie River to off-channel rearing and refuge habitat within the bank project. The loss of floodplain connectivity is a limiting factor in this system and the SBMB provides valuable rearing habitat for juvenile Coho and Chinook salmon during outmigration and high flows. Habitat types at the

SBMB include forested, shrub, emergent and aquatic bed wetlands, riparian uplands and stream habitat as well as floodplain forested upland habitat.

The SBMB has met all required performance standards applicable to the project for credit release. Given the size and scope wetland restoration and location on the Snoqualmie River the Snohomish Basin Mitigation Bank is the most suitable mitigation bank for the project's compensatory mitigation requirements. Mitigation Banks are the preferred solution for implementing successful compensatory mitigation as they have financial protections and guarantees, strict agency oversight and limit or eliminate temporal loss of wetland functions. For more information about the SBMB contact:

Mitigation Banking Services LLC.

Zach Woodward  
Project Manager  
PO Box 354  
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Phone: 425.205.0279  
Email: zach@mitigationbankingservices.com

***Confirmation of Mitigation Credit Availability***

As of August of 2019, the Snohomish Basin Mitigation Bank has 40.19 mitigation credits available for use and transfer. Mitigation credits are provided from the bank to an applicant's project using the suggested ratios in the table below, as approved by the USACE and Washington State Department of Ecology:

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2 to 1
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Critical Area Buffer	1 to 1
Stream	Case by case

Proof of the current number of available mitigation credits at the SBMB site can be confirmed by approving agency(s) through the Interagency Review Team (IRT).

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The Snohomish Basin Wetland Mitigation Bank project has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the US Army Corps of Engineers and the Washington State Department of Ecology. The site development plan for the SBMB is detailed in the bank's Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies participated in the development of the banking instrument:

- US Army Corps of Engineers, Seattle District
- US Environmental Protection Agency
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources, Aquatic Resources Division
- Snohomish County
- King County

## ***7. Wetland Functions Provided at Wetland Mitigation Bank***

### **Summary of Wetland functions provided at the SBMB:**

The table below summarizes existing wetland functions and predicts the relative extent of these functions with implementation of the Bank Project. A substantial increase in wetland function is expected to result after project completion, generally rising from low values, to moderate to high values. This "ecological lift" forms the basis for bank credits that compensate for impacts to wetlands, streams, buffers, and other resources in the service area.

**Table 2\*. Summary of Wetland Functional Assessment Under Existing Conditions Compared to Project Implementation.**

WETLAND FUNCTION	EXISTING CONDITION	WITH PROJECT IMPLEMENTATION
Groundwater Recharge	Low	Moderate to High
Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

\*Snohomish Basin Mitigation Bank MBI, July 2005

Below is a summary of wetland functions provided at the SBMB, broken down by category:

### **Hydrology**

The SBMB provides flood storage and the desynchronization of flood flows for the Snoqualmie River as well as erosion and shoreline protection through the reduction of peak flows and attenuation of storm water runoff rates to the lower Snohomish Basin. Groundwater recharge to the hyporheic zone of the Snoqualmie River occurs from slowing storm water runoff and flood flows and detaining it in the low lying riverine and depressional wetlands at the SBMB. Additionally during high flows in the Snoqualmie River, the SBMB wetlands collect and retain sediment and reduce sediment transfer rates to the lower watershed.

### **Water quality**

The SBMB wetlands filter heavy nutrient loads, chemical contaminants and heavy metals from storm water runoff, road runoff and agriculture activities upstream from the bank site. Given the bank's landscape position, the wetlands at the SBMB act as a natural filter for surface water flows that enter the bank site upstream and eventually exit into the Snoqualmie River and Pearson Eddy. Water quality testing conducted in June of 2009 for microbiological, demand and nutrient loads showed a significantly reduced level of Fecal Coliform and Total Nitrogen Loads discharged from the bank site compared to samples taken from flows entering the bank site upstream and from the surrounding drainage ditches (*AmTest Laboratories SBMB project June 2009*).

## Wildlife Habitat

The SBMB project encompasses a large area with varying aquatic and terrestrial habitat types. Floodplain upland, aquatic bed, emergent, shrub and forested wetlands create a mosaic of habitat types and structural diversity throughout the site. Restoration activities have improved food chain support and species richness, providing habitat for fish, amphibians, mammals and birds. To illustrate the level of habitat connectivity achieved at the bank site, large mammals such as elk, deer and bear have been observed using the site as a connective corridor to their higher elevation habitat areas.

The SBMB is also providing off channel rearing and refuge for juvenile salmonids during high flows in the main stem of the Snoqualmie River. According to the 2005 Snohomish River Basin Salmon Conservation Plan, the lack of rearing and refuge habitat on the main stem of the Snoqualmie River is a limiting factor for juvenile salmonids. Fish presence surveys were conducted in 2013 to study and document what fish species are using the SBMB at different points of the year. Survey results indicate that juvenile Coho and Chinook use the bank for the majority of the year to forage and seek refuge off the mainstem of the Snoqualmie River. Additionally, cutthroat and rainbow trout were documented in the bank site presumably for the same reasons (SBMB Stream Habitat Survey Report 2013)

## Pre and Post Construction Site Conditions

Below is a table of existing and proposed conditions at the SBMB following construction of each phase of the bank site. Table 3 shows the area of expected wetland hydrology restored in each phase. The SBMB will restore 135.4 acres of Category II wetlands to the national wetland inventory. Table 4 shows the mix of different habitat types restored to the site from the current condition in acres and length of stream restoration in linear feet.

RESTORATION PHASE	Existing Conditions (acres)			Proposed Conditions (acres)		
	Effectively Drained Wetlands and Other Uplands	Farm Wetland	Total	Wetland	Upland	Stream and Riparian
Phase 1	36.4	4.4	40.8	21.6	19.2	0
Phase 2	96.2	18.8	115.0	99.9	15.1	0
Phase 3	41.8	1.4	43.2	32.7	8.4	2.1
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>154.2</b>	<b>42.7</b>	<b>2.1</b>

HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectively Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
Perimeter Buffer	0	0	0	5.9	5.3	10.8	22.0
Floodplain Upland	0	0	0	15.3	12.0	2.9	30.2
Forested Wetland	0	0	0	6.8	14.4	4.7	25.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	13.5	38.1
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	11.3	79.5
Aquatic Bed Wetland	0	0	0	0.2	3.1	0	3.3
Pasture	174.4	24.6	199.0	0	0	0	0
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>40.8</b>	<b>115.0</b>	<b>43.2</b>	<b>199.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400lf	9000lf

\*Snohomish Basin Mitigation Bank MBI 2005

### Monitoring and Reporting

Section 12.0 of the SBMB MBI details Monitoring, Reporting, and Remedial Actions including as-built reports for each phase of construction; annual monitoring reports that document the condition of the SBMB and its progress toward achieving goals, objectives, and performance standards; monitoring of hydrology and the functioning of relocated streams and drainages; and vegetation survival monitoring. Monitoring report content and schedules are prescribed.

Specific methodology for monitoring is correlated to the various performance standards. For example, permanent monitoring wells will be used to determine presence of wetland hydrology during years 3, 5, and 7 for Performance Standard 2B. Wetland delineation will be conducted in years 7 and 10 to satisfy Performance Standard 2E. Permanent vegetation plots will be used in years 3, 5, 7, and 10 to assess plant density and percent survival to satisfy Performance Standards 4B through 4I. Methodology and reports are submitted and reviewed by the IRT. If the bank is successful in achieving its performance standards, the associated credits for those performance standards are released.

## 8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

NA

## 9. Proposed Mitigation Credits

The Snohomish Basin Mitigation Bank will provide 1.664 mitigation credits under this Bank Use Plan. Wetland mitigation is provided at a 1:1 area ratios for Category III wetlands and a 1.2:1 ratio for Category II wetlands for the project mitigation requirements. The credit calculation is as follows:

**Table 6: Mitigation Bank Credits Proposed for Use by Impact Project**

<b>Wetland Identifier</b>	<b>Wetland Class</b>	<b>Wetland Area (acres)</b>	<b>Credit:impact ratio</b>	<b>Total Credits Required for Impact</b>
Wetland A	II	0.290 acres	1.2:1	.348
Wetland B	III	0.440 acres	1:1	.440
Wetland C	III	0.200 acres	1:1	.200
Wetland D	II	0.418 acres	1.2:1	.502
Wetland F	III	0.130 acres	1:1	.130
Wetland J	III	0.020 acres	1:1	.020
Wetland Z	II	0.020 acres	1.2:1	.024
<b>Total</b>		<b>1.510 acres</b>		<b>1.664</b>

## 10. Credit Purchase or Transfer Timing

The applicant will enter into a Purchase Agreement with the representative of the Snohomish Basin Mitigation Bank, Mitigation Banking Services LLC., for 1.664 mitigation credits that would appropriately mitigate for the proposed project impacts. Purchase of credits will be completed prior to the applicant's construction activities occurring and as a condition of the applicant's permit issuance. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.

**REVISED MITIGATION BANK USE PLAN  
COSTCO LAKE STEVENS AND CITY OF LAKE STEVENS 24<sup>TH</sup>  
STREET EXTENSION PROJECT**

**NWS-**

**October 17, 2019 - Sewall Wetland Consulting, Inc.**

**For:**

**Peter Kahn**

**Costco Wholesale**

**999 Lake Drive**

**Issaquah, Washington 98027**

**Bank Use Plan Outline**

## **1. Project Description**

This project is located on a 39.09 acre site including Parcels #00457000002102, 2201, 2304, 2401, 2501, 2502 & 2503, located west of SR 9 in the City of Lake Stevens, Washington. The proposed project includes the construction of a Costco membership facility with associated infrastructure, as well as the City of Lake Stevens road improvements, including the extension of SE 24<sup>th</sup> Street through the site and improvements to SR9 at the intersection of SR9 and Lake Stevens Road (collectively the “Costco Project”). The Costco Project would fill all or part of 7 wetlands resulting in a total of 1.84 acres of wetland fill.

Wetland D is proposed to be impacted with 32,326sf (0.74 ac) of fill for the Costco Project. Due to its contribution to an off-site fish bearing streams hydrology, a portion of the impact to Wetland D will be mitigated on site with creation of 42,407 sf of wetland. At a 3:1 ratio this would compensate for 14,136sf (0.32ac) of Category II wetland. The remainder of the impact to Wetland D (18,190sf, 0.42ac) will be mitigated through credit purchase in the bank, which is the subject of the template discussion below.

## **2. Existing Conditions of Wetlands and Buffers**

### **Uplands**

With the exception of two single family residences on the eastern side of the site, the majority of the site is forested with both deciduous and coniferous trees. The site contains an undulating topography with a topographic high on the northeast and a low on the southwest. The central area of the site to the north and west of the existing homes shows evidence of past use as a gravel or borrow pit. Cut slopes, and obvious excavations are present in this area. Chain link fences surround portions of this area as well as dense thickets of Himalayan blackberry. An old trench-like logging road feature runs diagonally through the site, and several excavated ditches are present in the wetlands on the south end of the site.

The site is primarily forested with coniferous species (douglas fir, western red cedar and western hemlock) with the exception of the wetlands and some alder/big leaf maple-dominated areas near the center and periphery of the site. Understory species include vine maple, Indian plum, hazelnut, sword fern, salal, elderberry, stinging nettle and Himalayan and cut leaf blackberry.

Soil pits excavated throughout the upland areas of the site generally revealed a gravelly loam soil with colors ranging from 10YR 3/3-10YR 3/6, which were dry.

### Streams

Mosher Creek is present on the western side of the site and west of the proposed 24th Street road extension. Mosher Creek is a fairly undisturbed channel in this area with a width between OHWM of 8'-10' and with a mix of sand and mud bottom substrates. No fish were observed in this stream, but as noted in The Watershed Report (September 7, 2017), there are no obvious barriers to fish passage, and as a result, the stream is presumed to be a fish bearing, or Type F water. No impacts to this stream are proposed as part of the development of the Costco Project.

### Wetlands

A total of six (6) wetlands were identified in the project area and are identical to the previous delineations on the site.

**Table 1. Summary of Wetland Ratings**

<u>Wetland</u>	<u>Water Quality</u>	<u>Hydrologic</u>	<u>Habitat</u>	<u>Total</u>	<u>Category</u>
A	7	7	6	20	II
B	6	7	4	17	III
C	7	8	4	19	III
D	6	7	7	20	II
F	6	5	5	16	III
M	6	8	6	20	II
J	5	5	6	16	III
<u>Offsite</u>					
X	7	6	7	20	II
Z	8	7	6	21	II

Below is a brief description of the wetlands with proposed impacts;

#### Wetland A

Wetland A is located on the southeast corner of the site. It is depressional in character and contains emergent, scrub shrub and forested wetland classes. Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 6 points for habitat. This indicates that Wetland A is a Category II wetland.

## Wetland B

Wetland B is located on the southeast portion of the site north of Wetland A .

This wetland is dominated by both forested and scrub shrub vegetation with black cottonwood, sitka and pacific willow, crabapple, vine maple and lady fern present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 17 points with 4 points for habitat. This indicates that Wetland B is a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score, like Wetland B, would have a 65' buffer for a high intensity land use.

## Wetland C

Wetland C is located just north of Wetland B and is dominated by a forested wetland class containing black cottonwood, sitka and pacific willow, hardhack and reed canary grass.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 19 points with 4 points for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score, like Wetland C, would have a 65' buffer for high intensity land use.

## Wetland D

Wetland D is located on the south side of the site. This wetland contains areas of forested, scrub shrub, emergent and aquatic bed wetland classes.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 7 points for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands have a buffer that ranges from 45-190 feet depending on the habitat score. Because Wetland D is a Category II wetlands with a high habitat score, it is subject to a 95' buffer for high intensity land use.

## Wetland F

Wetland F is a small forested wetland located on the north end of the site.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 5 points for habitat, which indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score, like Wetland F, would have a 65' buffer for high intensity land use.

## Wetland J

Wetland J is a portion of an old dug ditch that has developed wetland characteristics. This ditch appears to have been dug historically to drain a portion of Wetland D, but the connection to Wetland D is not wetland, just a dry ditch.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 6 points for habitat, which indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a high habitat score of 6 would have a 95’ buffer for high intensity land use.

**Wetland Z**

Wetland Z is a combination slope and depressional wetland located east of SR9 and south of Lake Stevens Road in the vicinity of the proposed SR9 road improvements. A small intermittent stream, previously identified as a Type F stream, passes through this wetland.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 22 points with 7 points for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands with a high habitat score, like Wetland M, would have a 95’ buffer for high intensity land use.

**3. Avoidance and Minimization of Wetland Impacts**

Wetlands A, B, D and J are located within areas that will be impacted by the extension of 24<sup>th</sup> Street East and the connection to Lake Stevens Road. These impacts cannot be avoided if the roads are to be extended.

Portions of Wetlands B, C, D F & J are proposed to be impacted by the development of the proposed Costco facility and its associated parking area and infrastructure. There is no way to fit the facility on the site without impacts to these wetlands.

**4. Unavoidable Wetland Impact Acreage**

A total of 1.84 acres of wetland will be filled by the Costco Project. A total of 0.32 acres will be mitigated on site through wetland creation. Additional off-site mitigation includes improving fish habitat through the removal/ replacement of 6 downstream culverts. This leaves a total of 1.51 acres of wetland to be mitigated through credit purchase in the bank.

**Example Table 2  
Expected Impacts to Wetlands**

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
A		0.290	0	0	PEM,PFO	II	II	Depressional
B		0.440	0	0	PSS,PFO	III	III	Depressional
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Valley. The bank project is designed to improve and restore critical habitat for threatened and endangered salmonids within the river basin by reconnecting the main stem of the Snoqualmie River to off-channel rearing and refuge habitat within the bank project. The loss of floodplain connectivity is a limiting factor in this system and the SBMB provides valuable rearing habitat for juvenile coho and Chinook salmon during outmigration and high flows. Habitat types at the SBMB include forested, shrub, emergent and aquatic bed wetlands, riparian uplands and stream habitat as well as floodplain forested upland habitat.

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**7. Confirmation of Mitigation Credit Availability**

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Proof of the current number of available mitigation credits at the SBMB site can be

confirmed by approving agency(s) through the Interagency Review Team (IRT).

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Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

\*Snohomish Basin Mitigation Bank MBI, July 2005

Below is a summary of wetland functions provided at the SBMB, broken down by category:

### **A. Hydrology**

The SBMB provides flood storage and the desynchronization of flood flows for the Snoqualmie River as well as erosion and shoreline protection through the reduction of peak flows and attenuation of storm water runoff rates to the lower Snohomish Basin. Groundwater recharge to the hyporheic zone of the Snoqualmie River occurs from slowing storm water runoff and flood flows and detaining it in the low-lying riverine and depression wetlands at the SBMB. Additionally during high flows in the Snoqualmie River, the SBMB wetlands collect and retain sediment and reduce sediment transfer rates to the lower watershed.

## **B. Water quality**

The SBMB wetlands filter heavy nutrient loads, chemical contaminants and heavy metals from storm water runoff, road runoff and agriculture activities upstream from the bank site. Given the bank's landscape position, the wetlands at the SBMB act as a natural filter for surface water flows that enter the bank site upstream and eventually exit into the Snoqualmie River and Pearson Eddy. Water quality testing conducted in June of 2009 for microbiological, demand and nutrient loads showed a significantly reduced level of Fecal Coliform and Total Nitrogen Loads discharged from the bank site compared to samples taken from flows entering the bank site upstream and from the surrounding drainage ditches (*AmTest Laboratories SBMB project June 2009*).

## **C. Wildlife Habitat**

The SBMB project encompasses a large area with varying aquatic and terrestrial habitat types. Floodplain upland, aquatic bed, emergent, shrub and forested wetlands create a mosaic of habitat types and structural diversity throughout the site. Restoration activities have improved food chain support and species richness, providing habitat for fish, amphibians, mammals and birds. To illustrate the level of habitat connectivity achieved at the bank site, large mammals such as elk, deer and bear have been observed using the site as a connective corridor to their higher elevation habitat areas.

The SBMB is also providing off channel rearing and refuge for juvenile salmonids during high flows in the main stem of the Snoqualmie River. According to the 2005 Snohomish River Basin Salmon Conservation Plan, the lack of rearing and refuge habitat on the main stem of the Snoqualmie River is a limiting factor for juvenile salmonids. Fish presence surveys were conducted in 2013 to study and document what fish species are using the SBMB at different points of the year. Survey results indicate that juvenile Coho and Chinook use the bank for the majority of the year to forage and seek refuge off the mainstem of the Snoqualmie River. Additionally, cutthroat and rainbow trout were documented in the bank site presumably for the same reasons (SBMB Stream Habitat Survey Report 2013)

## **D. Pre and Post Construction Site Conditions**

Below is a table of existing and proposed conditions at the SBMB following construction of each phase of the bank site. Table 3 shows the area of expected wetland hydrology restored in each phase. The SBMB will restore 135.4 acres of Category II wetlands to the national wetland inventory. Table 4 shows the mix of different habitat types restored to the site from the current condition in acres and length of stream restoration in linear feet.

RESTORATION PHASE	Existing Conditions (acres)			Proposed Conditions (acres)		
	Effectively Drained Wetlands and Other Uplands	Farm Wetland	Total	Wetland	Upland	Stream and Riparian
Phase 1	36.4	4.4	40.8	21.6	19.2	0
Phase 2	96.2	18.8	115.0	99.9	15.1	0
Phase 3	41.8	1.4	43.2	32.7	8.4	2.1
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>154.2</b>	<b>42.7</b>	<b>2.1</b>

HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectivel y Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
Perimeter Buffer	0	0	0	5.9	5.3	10.8	22.0
Floodplain Upland	0	0	0	15.3	12.0	2.9	30.2
Forested Wetland	0	0	0	6.8	14.4	4.7	25.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	13.5	38.1
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	11.3	79.5
Aquatic Bed Wetland	0	0	0	0.2	3.1	0	3.3
Pasture	174.4	24.6	199.0	0	0	0	0
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>40.8</b>	<b>115.0</b>	<b>43.2</b>	<b>199.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400l f	9000lf

\*Snohomish Basin Mitigation Bank MBI 2005

### E. Monitoring and Reporting

Section 12.0 of the SBMB MBI details Monitoring, Reporting, and Remedial Actions including as-built reports for each phase of construction; annual monitoring reports that document the condition of the SBMB and its progress toward achieving goals, objectives, and performance

standards; monitoring of hydrology and the functioning of relocated streams and drainages; and vegetation survival monitoring. Monitoring report content and schedules are prescribed.

Specific methodology for monitoring is correlated to the various performance standards. For example, permanent monitoring wells will be used to determine presence of wetland hydrology during years 3, 5, and 7 for Performance Standard 2B. Wetland delineation will be conducted in years 7 and 10 to satisfy Performance Standard 2E. Permanent vegetation plots will be used in years 3, 5, 7, and 10 to assess plant density and percent survival to satisfy Performance Standards 4B through 4I. Methodology and reports are submitted and reviewed by the IRT. If the bank is successful in achieving its performance standards, the associated credits for those performance standards are released.

## 8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

N/A

## 9. Proposed Mitigation Credits

The Snohomish Basin Mitigation Bank will provide 1.664 mitigation credits under this Bank Use Plan. Wetland mitigation is provided at a 1:1 area ratios for Category III wetlands and a 1.2:1 ratio for Category II wetlands for the project mitigation requirements. The credit calculation is as follows:

**Table 6: Mitigation Bank Credits Proposed for Use by Impact Project**

Wetland Identifier	Wetland Class	Wetland Area (acres)	Credit:impact ratio	Total Credits Required for Impact
Wetland A	II	0.290 acres	1.2:1	.348
Wetland B	III	0.440 acres	1:1	.440
Wetland C	III	0.200 acres	1:1	.200
Wetland D	II	0.418 acres	1.2:1	.502
Wetland F	III	0.130 acres	1:1	.130
Wetland J	III	0.020 acres	1:1	.020
Wetland Z	II	0.020 acres	1.2:1	.024
<b>Total</b>		<b>1.510 acres</b>		<b>1.664</b>

## 10. Credit Purchase or Transfer Timing

The applicant will enter into a Purchase Agreement with the representative of the Snohomish Basin Mitigation Bank, Mitigation Banking Services LLC., for 1.664 mitigation credits that would appropriately mitigate for the proposed project impacts. Purchase of credits will be completed prior to the applicant's construction activities occurring and as a condition of the applicant's permit issuance. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.

**REVISED MITIGATION BANK USE PLAN  
COSTCO LAKE STEVENS AND CITY OF LAKE STEVENS  
24<sup>TH</sup> STREET EXTENSION PROJECT**

**NWS-**

**November 15, 2019 - Sewall Wetland Consulting, Inc.**

**For:**

**Peter Kahn**

**Costco Wholesale**

**999 Lake Drive**

**Issaquah, Washington 98027**

**Bank Use Plan Outline**

**1. Project Description**

This project is located on a 39.09 acre site including Parcels #00457000002102, 2201, 2304, 2401, 2501, 2502 & 2503, located west of SR 9 in the City of Lake Stevens, Washington. The proposed project includes the construction of a Costco Warehouse with associated infrastructure, as well as the City of Lake Stevens extension of SE 24<sup>th</sup> Street through the site and improvements to SR9 at the intersection of SR9 and Lake Stevens Road. The proposed project would fill all or part of 7 wetlands resulting in a total of 1.84acres of wetland fill.

A total of 1.89 acres of Category II (47,704sf/1.10 ac) and Category III (34122sf/0.78ac) will be impacted by the project. Wetland D, a Category II wetland, is proposed to be impacted with 32,292sf (0.74 ac) of fill for the project. Due to its contribution to an off-site fish bearing stream's hydrology, a portion of the impact will be mitigated on site with creation of 38,248sf (0.88ac) of wetland. At a 3:1 ratio this would compensate for 12,749sf (0.29ac) of Category II wetland. The remainder of this wetland impact for Wetland D will be mitigated through credit purchase in the bank. This template reflects that portion to be mitigated by the bank, which includes 34.122sf of category III wetland, and 34,955sf of Category II wetland.

**2. Existing Conditions of Wetlands and Buffers**

**Uplands**

With the exception of two single family residences on the eastern side of the site, the majority of the site is forested with both deciduous and coniferous forest. The site contains an undulating topography with a topographic high on the northeast and a low on the southwest. The central area of the site to the north and west of the existing homes show evidence of past use as a gravel or borrow pit. Cut slopes, and obvious excavations are present in this area. Chain link fences surround portions of this area as well as dense thickets of Himalayan blackberry. An old trench like logging road type feature goes diagonally through the site, and several excavated ditches are present in the wetlands on the south end of the site.

The site is primarily forested with coniferous species (douglas fir, western red cedar and western hemlock) with the exception of the wetlands and some alder/big leaf maple dominated areas near the center and periphery of the site. Understory species include vine maple, Indian plum, hazelnut, sword fern, salal, elderberry, stinging nettle and Himalayan and cut leaf blackberry.

Soil pits excavated throughout the upland areas of the site generally revealed a gravelly loam soil with colors ranging from 10YR 3/3-10YR 3/6 which were dry.

### Streams

Mosher Creek is present on the western side of the site and west of the proposed 24th Street road extension. Mosher Creek is a fairly pristine channel in this area with a width between OHWM of 8'-10' with a mix of sand and mud bottom substrates. No fish were observed in this stream, but as noted in The Watershed report, there are no obvious barriers to fish passage and as a result it is presumed to be a fish bearing, or Type F water. No impacts to this stream are proposed.

### Wetlands

A total of six (6) wetlands were identified in the project area and are identical to the previous delineations on the site.

**Table 1. Summary of Wetland Ratings**

<u>Wetland</u>	<u>Water Quality</u>	<u>Hydrologic</u>	<u>Habitat</u>	<u>Total</u>	<u>Category</u>
A	7	7	6	20	II
B	6	7	4	17	III
C	7	8	4	19	III
D	6	7	7	20	II
F	6	5	5	16	III
M	6	8	6	20	II
J	5	5	6	16	III
<u>Offsite</u>					
X	7	6	7	20	II
Z	8	7	6	21	II

Below is a brief description of the wetlands with proposed impacts;

#### Wetland A

Wetland A is located on the southeast corner of the site and contains emergent, scrub shrub and forested wetland classes and is depressional in character. Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 6 for habitat. This indicates a Category II wetland.

## Wetland B

Wetland B is located on the southeast portion of the site north of Wetland A . This wetland is dominated by both forested and scrub shrub vegetation with black cottonwood, sitka and pacific willow, crabapple, vine maple and lady fern present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland B has, would have a 65' buffer for high intensity land use.

## Wetland C

Wetland C is located just north of Wetland B and is dominated by a forested wetland class containing black cottonwood, sitka and pacific willow, hardhack and reed canary grass present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 19 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland C has, would have a 65' buffer for high intensity land use.

## Wetland D

Wetland D is located on the south side of the site. This large wetland contains areas of forested, scrub shrub, emergent and aquatic bed wetland classes.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands have a buffer that ranges from 45-190 feet depending on the habitat score. Category II wetlands with a high habitat score as Wetland D has, would have a 95' buffer for high intensity land use.

## Wetland F

Wetland F is a small forested wetland located on the north end of the site.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 5 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland F has, would have a 65' buffer for high intensity land use.

## Wetland J

Wetland J is a portion of an old dug ditch that has developed wetland characteristics. This ditch appears to have been dug historically to drain a portion of Wetland D, but the connection to Wetland D is not wetland, just a dry ditch.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 6 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a high habitat score of 6 would have a 95' buffer for high intensity land use.

## Wetland Z

Wetland Z is a combination slope and depressional wetland located east of SR9 and south of Lake Stevens Road in the vicinity of the proposed SR9 road improvements. A small intermittent stream, previously identified as a Type F stream, passes through this wetland.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 22 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands with a high habitat score as Wetland M has, would have a 95' buffer for high intensity land use.

### **3. Avoidance and Minimization of Wetland Impacts**

Wetlands A, B, D and J are located within areas that will be impacted by the extension of 24<sup>th</sup> Street East and the connection of Lake Stevens Road. These impacts cannot be avoided and still extend these roads.

Portions of Wetlands B, C, D F & J are proposed to be impacted by the development of the proposed Costco and its associated parking area and infrastructure. There is no way to fit the facility on the site without impacts to these wetlands.

### **4. Unavoidable Wetland Impact Acreage**

A total of 1.89 acres of wetland will be filled by this project. A total of 0.88 acres will be mitigated on site through wetland creation. Based upon a 3:1 ratio for creation, this equates to compensation for 0.29 acres of Category II wetland fill. In addition, off-site mitigation includes improving fish habitat through the removal/ replacement of 6 downstream culverts. This leaves a total of 1.586 acres of wetland to be mitigated through credit purchase in the bank.

**Example Table 2**  
**Expected Impacts to Wetlands not compensated by on-site creation**

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
A		0.328	0	0	PEM,PFO	II	II	Depressional
B		0.440	0	0	PSS,PFO	III	III	Depressional
C		0.200	0	0	PFO	III	III	Depressional
D		0.448	0	0	PFO,PSS,PAB	II	II	Depressional
F		0.130	0	0	PFO	III	III	Depressional
<b>J</b>		<b>0.020</b>	<b>0</b>	<b>0</b>	<b>PSS</b>	<b>III</b>	<b>III</b>	<b>Depressional</b>

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
Z		0.020	0	0	PEM, PSS, PFO	II	II	Depressional
<b>TOTALS</b>		<b>1.586</b>	<b>0</b>	<b>0</b>				

**5. Impacted Wetland Functions**

As indicated by the ratings of the site’s wetlands, functions are moderate to high depending upon the wetland impacted. Stormwater and water functions of these wetlands will be partially mitigated through the sites stormwater system. Other functions will be replaced though some on-site wetland creation as well as off-site mitigation bank purchase.

**6. Wetland Mitigation Site Selection Rationale**

Compensatory mitigation requirements for the Costco Lake Stevens Project are intended to replace the temporary and permanent loss of aquatic resource functions caused by the project’s construction activities. The permit applicant will contract with Mitigation Banking Services LLC., which is the management representative of both the Snohomish Basin Mitigation Bank and the Skykomish Habitat Mitigation Bank. The Costco Lake Stevens project is located within the same river basin and service area (Water Resource Inventory Area 7) for both bank projects. The applicant has chosen to use credits from the Snohomish Basin Mitigation Bank (SBMB) which is located on the Snoqualmie River, in the Snoqualmie River Basin in the east half of Section 35 and the west half of Section 36, Township 27 North, Range 6 East, in Snohomish County Washington. The principle objectives of this mitigation bank project are to (1) re-establish and enhance wetland hydrology to a large historical wetland complex along Pearson Eddy which is connected to the Snoqualmie River, (2) restore historical riverine and depressional wetland function and habitat within the wetland and stream channel system (3) re-establish

habitat connectivity and fish use of the system by restoring historical stream channels and meander scars across the site, which are hydrologically connected to the Snohomish River (4) remove invasive species on the site and increase the cover and structural diversity of native wetland plant species.

As of the March 2014, the SBMB is fully constructed. The project totals approximately 200 acres of wetland, riparian and upland habitats and is adjacent to additional restoration lands, helping to create a habitat corridor and upland habitat connectivity across the Snoqualmie Valley. The bank project is designed to improve and restore critical habitat for threatened and endangered salmonids within the river basin by reconnecting the main stem of the Snoqualmie River to off-channel rearing and refuge habitat within the bank project. The loss of floodplain connectivity is a limiting factor in this system and the SBMB provides valuable rearing habitat for juvenile Coho and Chinook salmon during outmigration and high flows. Habitat types at the SBMB include forested, shrub, emergent and aquatic bed wetlands, riparian uplands and stream habitat as well as floodplain forested upland habitat.

The SBMB has met all required performance standards applicable to the project for credit release. Given the size and scope wetland restoration and location on the Snoqualmie River the Snohomish Basin Mitigation Bank is the most suitable mitigation bank for the project's compensatory mitigation requirements. Mitigation Banks are the preferred solution for implementing successful compensatory mitigation as they have financial protections and guarantees, strict agency oversight and limit or eliminate temporal loss of wetland functions. For more information about the SBMB contact:

Mitigation Banking Services LLC.

Zach Woodward  
Project Manager  
PO Box 354  
Kirkland, WA 98033  
Phone: 425.205.0279  
Email: zach@mitigationbankingservices.com

***Confirmation of Mitigation Credit Availability***

As of August of 2019, the Snohomish Basin Mitigation Bank has 40.19 mitigation credits available for use and transfer. Mitigation credits are provided from the bank to an applicant's project using the suggested ratios in the table below, as approved by the USACE and Washington State Department of Ecology:

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2 to 1

Wetland, Category III	1.0 to 1
Wetland, Category IV	.85 to 1
Critical Area Buffer	1 to 1
Stream	Case by case

Proof of the current number of available mitigation credits at the SBMB site can be confirmed by approving agency(s) through the Interagency Review Team (IRT).

Contact:

Kate Thompson  
 Shorelands and Environmental Assistance Program  
 P.O. Box 47600  
 Olympia, WA 98504  
 (360) 407-6749  
[kate.thompson@ecy.wa.gov](mailto:kate.thompson@ecy.wa.gov)

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 Seattle, WA 98124  
 (206) 764-6903  
[Gail.M.Terzi@usace.army.mil](mailto:Gail.M.Terzi@usace.army.mil)

The Snohomish Basin Wetland Mitigation Bank project has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the US Army Corps of Engineers and the Washington State Department of Ecology. The site development plan for the SBMB is detailed in the bank's Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies participated in the development of the banking instrument:

- US Army Corps of Engineers, Seattle District
- US Environmental Protection Agency
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources, Aquatic Resources Division

- Snohomish County
- King County

## 7. Wetland Functions Provided at Wetland Mitigation Bank

### Summary of Wetland functions provided at the SBMB:

The table below summarizes existing wetland functions and predicts the relative extent of these functions with implementation of the Bank Project. A substantial increase in wetland function is expected to result after project completion, generally rising from low values, to moderate to high values. This “ecological lift” forms the basis for bank credits that compensate for impacts to wetlands, streams, buffers, and other resources in the service area.

**Table 2\*. Summary of Wetland Functional Assessment Under Existing Conditions Compared to Project Implementation.**

WETLAND FUNCTION	EXISTING CONDITION	WITH PROJECT IMPLEMENTATION
Groundwater Recharge	Low	Moderate to High
Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

\*Snohomish Basin Mitigation Bank MBI, July 2005

Below is a summary of wetland functions provided at the SBMB, broken down by category:

### Hydrology

The SBMB provides flood storage and the desynchronization of flood flows for the Snoqualmie River as well as erosion and shoreline protection through the reduction of peak flows and attenuation of storm water runoff rates to the lower Snohomish Basin. Groundwater recharge to the hyporheic zone of the Snoqualmie River occurs from slowing storm water runoff and flood flows and detaining it in the low lying riverine and depressional wetlands at the SBMB.

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The SBMB wetlands filter heavy nutrient loads, chemical contaminants and heavy metals from storm water runoff, road runoff and agriculture activities upstream from the bank site. Given the bank's landscape position, the wetlands at the SBMB act as a natural filter for surface water flows that enter the bank site upstream and eventually exit into the Snoqualmie River and Pearson Eddy. Water quality testing conducted in June of 2009 for microbiological, demand and nutrient loads showed a significantly reduced level of Fecal Coliform and Total Nitrogen Loads discharged from the bank site compared to samples taken from flows entering the bank site upstream and from the surrounding drainage ditches (*AmTest Laboratories SBMB project June 2009*).

### **Wildlife Habitat**

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HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectivel y Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
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Floodplain Upland	0	0	0	15.3	12.0	2.9	30.2
Forested Wetland	0	0	0	6.8	14.4	4.7	25.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	13.5	38.1
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	11.3	79.5
Aquatic Bed Wetland	0	0	0	0.2	3.1	0	3.3
Pasture	174.4	24.6	199.0	0	0	0	0
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>40.8</b>	<b>115.0</b>	<b>43.2</b>	<b>199.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400l f	9000lf

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Section 12.0 of the SBMB MBI details Monitoring, Reporting, and Remedial Actions including as-built reports for each phase of construction; annual monitoring reports that document the condition of the SBMB and its progress toward achieving goals, objectives, and performance

standards; monitoring of hydrology and the functioning of relocated streams and drainages; and vegetation survival monitoring. Monitoring report content and schedules are prescribed.

Specific methodology for monitoring is correlated to the various performance standards. For example, permanent monitoring wells will be used to determine presence of wetland hydrology during years 3, 5, and 7 for Performance Standard 2B. Wetland delineation will be conducted in years 7 and 10 to satisfy Performance Standard 2E. Permanent vegetation plots will be used in years 3, 5, 7, and 10 to assess plant density and percent survival to satisfy Performance Standards 4B through 4I. Methodology and reports are submitted and reviewed by the IRT. If the bank is successful in achieving its performance standards, the associated credits for those performance standards are released.

## 8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

NA

## 9. Proposed Mitigation Credits

The Snohomish Basin Mitigation Bank will provide 1.746 mitigation credits under this Bank Use Plan. Wetland mitigation is provided at a 1:1 area ratios for Category III wetlands and a 1.2:1 ratio for Category II wetlands for the project mitigation requirements. The credit calculation is as follows:

**Table 6: Mitigation Bank Credits Proposed for Use by Impact Project**

Wetland Identifier	Wetland Class	Wetland Area (acres)	Credit:impact ratio	Total Credits Required for Impact
Wetland A	II	0.328 acres	1.2:1	.394
Wetland B	III	0.440 acres	1:1	.440
Wetland C	III	0.200 acres	1:1	.200
Wetland D	II	0.448 acres	1.2:1	.538
Wetland F	III	0.130 acres	1:1	.130
Wetland J	III	0.020 acres	1:1	.020
Wetland Z	II	0.020 acres	1.2:1	.024
<b>Total</b>		<b>1.586 acres</b>		<b>1.746</b>

## 10. Credit Purchase or Transfer Timing

The applicant will enter into a Purchase Agreement with the representative of the Snohomish Basin Mitigation Bank, Mitigation Banking Services LLC., for 1.746 mitigation credits that would appropriately mitigate for the proposed project impacts. Purchase of credits will be completed prior to the applicant's construction activities occurring and as a condition of the applicant's permit issuance. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.

**REVISED MITIGATION BANK USE PLAN  
COSTCO LAKE STEVENS AND & CITY OF LAKE STEVENS  
24<sup>TH</sup> STREET EXTENSION PROJECT**

**NWS-**

**February 10, 2020- Sewall Wetland Consulting, Inc.**

**For:**

**Peter Kahn**

**Costco Wholesale**

**999 Lake Drive**

**Issaquah, Washington 98027**

**Bank Use Plan Outline**

**1. Project Description**

This project is located on a 39.09 acre site including Parcels #00457000002102, 2201, 2304, 2401, 2501, 2502 & 2503, located west of SR 9 in the City of Lake Stevens, Washington. The project includes the construction of a Costco Warehouse with associated infrastructure, as well as the City of Lake Stevens extension of SE 24<sup>th</sup> Street through the site and improvements to SR9 at the intersection of SR9 and Lake Stevens Road. The project would fill all or part of 7 wetlands resulting in a total of 1.72 acres of wetland fill.

A total of 1.72 acres of Category II (46,592sf/1.069 ac) and Category III (29,031sf/0.66ac) will be impacted by the project. In addition, 2.24 acres of wetland will be impacted as “paper fill” to provide a 220’ buffer as requested to mitigate for road construction impacts to Wetlands A & D.

Wetland D, a Category II wetland will be impacted with 32,292sf (0.74 ac) of fill for the project. Following consultation with the Tulalip Tribes of Washington, Costco is proposing 19,824sf (0.45ac) of voluntary wetland creation along Wetland D, due to its contribution to an off-site fish bearing stream’s hydrology. Costco’s voluntary wetland creation is not being included in its wetland mitigation credit calculations. As a result, for permitting purposes, all wetland impacts and paper fill impacts will be compensated for through bank credit purchase ignoring the actual wetland creation in Wetland D.

**2. Existing Conditions of Wetlands and Buffers**

Uplands

With the exception of two single family residences on the eastern side of the site, the majority of the site is forested with both deciduous and coniferous forest. The site contains undulating topography with a topographic high on the northeast and a low on the southwest. The central area of the site to the north and west of the existing homes show evidence of past use as a gravel or borrow pit. Cut slopes, and obvious excavations are present in this area. Chain link fences

surround portions of this area as well as dense thickets of Himalayan blackberry. An old trench-like logging road runs diagonally through the site, and several excavated ditches are present in the wetlands on the south end of the site.

The site is primarily forested with coniferous species (douglas fir, western red cedar and western hemlock) with the exception of the wetlands and some alder/big leaf maple dominated areas near the center and periphery of the site. Understory species include vine maple, Indian plum, hazelnut, sword fern, salal, elderberry, stinging nettle and Himalayan and cut leaf blackberry.

Soil pits excavated throughout the upland areas of the site generally revealed a gravelly loam soil with colors ranging from 10YR 3/3-10YR 3/6 which were dry.

### Streams

Mosher Creek is present on the western side of the site and west of the proposed 24th Street road extension. Mosher Creek is a fairly pristine channel in this area with a width between OHWM of 8'-10' and a mix of sand and mud bottom substrates. No fish were observed in this stream, but as noted in The Watershed Report, there are no obvious barriers to fish passage and as a result it is presumed to be a fish bearing, or Type F water. No impacts to this stream are proposed.

### Wetlands

A total of five (5) wetlands were identified for impacts in the project area as detailed below in Table 1;

<u>Wetland</u>	<u>Water Quality</u>	<u>Hydrologic</u>	<u>Habitat</u>	<u>Total</u>	<u>Category</u>
A	7	7	6	20	II
B	6	7	4	17	III
C	7	8	4	19	III
D	6	7	7	20	II
J	5	5	6	16	III

Below is a brief description of the wetlands with proposed impacts;

#### *Wetland A*

Wetland A is located on the southeast corner of the site and contains emergent, scrub shrub and forested wetland classes. It is depressional in character. Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 6 for habitat. This indicates a Category II wetland.

#### *Wetland B*

Wetland B is located on the southeast portion of the site north of Wetland A . This wetland is dominated by both forested and scrub shrub vegetation with black cottonwood, sitka and pacific willow, crabapple, vine maple and lady fern present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland B has, would have a 65' buffer for high intensity land use.

#### *Wetland C*

Wetland C is located just north of Wetland B and is dominated by a forested wetland class containing black cottonwood, sitka and pacific willow, hardhack and reed canary grass present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 19 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland C has, would have a 65' buffer for high intensity land use.

#### *Wetland D*

Wetland D is located on the south side of the site. This large wetland contains areas of forested, scrub shrub, emergent and aquatic bed wetland classes.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands have a buffer that ranges from 45-190 feet depending on the habitat score. Category II wetlands with similar habitat score as Wetland D has, would have a 95' buffer for high intensity land use.

#### *Wetland J*

Wetland J is a portion of an old dug ditch that has developed wetland characteristics. This ditch appears to have been dug historically to drain a portion of Wetland D, but the connection to Wetland D is not wetland, just a dry ditch.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 6 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a habitat score of 6 would have a 95' buffer for high intensity land use.

### **3. Avoidance and Minimization of Wetland Impacts**

Wetlands A, B, D and J are located within areas that will be impacted by the extension of 24<sup>th</sup> Street East and the connection of Lake Stevens Road. These impacts cannot be avoided and still extend these roads.

Portions of Wetlands B, C, D & J would be impacted by the Costco development and its associated parking area and infrastructure. There is no way to fit the facility on the site without impacts to these wetlands.

#### 4. Unavoidable Wetland Impact Acreage

A total of 1.72 acres of wetland will be filled by this project. As previously mentioned, 0.45 acre of wetland will be created along Wetland D to provide future potential off channel fish habitat. In addition, Costco has voluntarily agreed to off-site mitigation for improving fish habitat through the removal/ replacement of 6 downstream culverts. Costco is not requesting mitigation credit for either the Wetland D creation or the off-site fish passage improvements.

All wetland impacts including paper fill impacts based upon a WADOE 220' buffer for Wetlands A and D will be mitigated through credit purchase. This leaves a total of 1.72 acres of wetland to be mitigated through credit purchase in the bank for actual fill, and 2.24 acres of "paper fill" of wetland to function as buffer..

**Example Table 2**  
**Expected Impacts to Wetlands not compensated by on-site creation**

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
A		0.328	0	0	PEM,PFO	II	II	Depressional
B		0.440	0	0	PSS,PFO	III	III	Depressional
C		0.200	0	0	PFO	III	III	Depressional
D		0.741	0	0	PFO,PSS,PAB	II	II	Depressional
J		0.020	0	0	PSS	III	III	Depressional
<b>TOTALS</b>		<b>1.719</b>	<b>0</b>	<b>0</b>				

#### 5. Impacted Wetland Functions

As indicated by the ratings of the site's wetlands, functions are moderate to high depending upon the wetland impacted. Stormwater and water functions of these wetlands will be partially mitigated through the sites stormwater system. Other functions will be replaced though off-site mitigation bank purchase.

#### 6. Wetland Mitigation Site Selection Rationale

Compensatory mitigation requirements for the Costco project are intended to replace the temporary and permanent loss of aquatic resource functions caused by the project's construction activities. The permit applicant will contract with Mitigation Banking Services LLC., which is the management representative of both the Snohomish Basin Mitigation Bank and the Skykomish Habitat Mitigation Bank. The Costco project is located within the same river basin and service area (Water Resource Inventory Area 7) for both bank projects. The applicant has

chosen to use credits from the Snohomish Basin Mitigation Bank (SBMB) which is located on the Snoqualmie River, in the Snoqualmie River Basin in the east half of Section 35 and the west half of Section 36, Township 27 North, Range 6 East, in Snohomish County Washington. The principle objectives of this mitigation bank project are to (1) re-establish and enhance wetland hydrology to a large historical wetland complex along Pearson Eddy which is connected to the Snoqualmie River, (2) restore historical riverine and depressional wetland function and habitat within the wetland and stream channel system (3) re-establish habitat connectivity and fish use of the system by restoring historical stream channels and meander scars across the site, which are hydrologically connected to the Snohomish River (4) remove invasive species on the site and increase the cover and structural diversity of native wetland plant species.

As of the March 2014, the SBMB is fully constructed. The project totals approximately 200 acres of wetland, riparian and upland habitats and is adjacent to additional restoration lands, helping to create a habitat corridor and upland habitat connectivity across the Snoqualmie Valley. The bank project is designed to improve and restore critical habitat for threatened and endangered salmonids within the river basin by reconnecting the main stem of the Snoqualmie River to off-channel rearing and refuge habitat within the bank project. The loss of floodplain connectivity is a limiting factor in this system and the SBMB provides valuable rearing habitat for juvenile Coho and Chinook salmon during outmigration and high flows. Habitat types at the SBMB include forested, shrub, emergent and aquatic bed wetlands, riparian uplands and stream habitat as well as floodplain forested upland habitat.

The SBMB has met all required performance standards applicable to the project for credit release. Given the size and scope wetland restoration and location on the Snoqualmie River the Snohomish Basin Mitigation Bank is the most suitable mitigation bank for the project's compensatory mitigation requirements. Mitigation Banks are the preferred solution for implementing successful compensatory mitigation as they have financial protections and guarantees, strict agency oversight and limit or eliminate temporal loss of wetland functions. For more information about the SBMB contact:

Mitigation Banking Services LLC.

Zach Woodward  
Project Manager  
PO Box 354  
Kirkland, WA 98033  
Phone: 425.205.0279  
Email: zach@mitigationbankingservices.com

### ***Confirmation of Mitigation Credit Availability***

As of August of 2019, the Snohomish Basin Mitigation Bank has 40.19 mitigation credits available for use and transfer. Mitigation credits are provided from the bank to an applicant's project using the suggested ratios in the table below, as approved by the USACE and Washington State Department of Ecology:

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2 to 1
Wetland, Category III	1.0 to 1
Wetland, Category IV	.85 to 1
Critical Area Buffer	1 to 1
Stream	Case by case

Proof of the current number of available mitigation credits at the SBMB site can be confirmed by approving agency(s) through the Interagency Review Team (IRT).

Contact:

Kate Thompson  
 Shorelands and Environmental Assistance Program  
 P.O. Box 47600  
 Olympia, WA 98504  
 (360) 407-6749  
[kate.thompson@ecy.wa.gov](mailto:kate.thompson@ecy.wa.gov)

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 4735 E Marginal Way S  
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The Snohomish Basin Wetland Mitigation Bank project has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the US Army Corps of Engineers and the Washington State Department of Ecology. The site development plan for the SBMB is detailed in the bank's Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies participated in the development of the banking instrument:

- US Army Corps of Engineers, Seattle District
- US Environmental Protection Agency
- Washington Department of Ecology

- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources, Aquatic Resources Division
- Snohomish County
- King County

## 7. Wetland Functions Provided at Wetland Mitigation Bank

### Summary of Wetland functions provided at the SBMB:

The table below summarizes existing wetland functions and predicts the relative extent of these functions with implementation of the Bank Project. A substantial increase in wetland function is expected to result after project completion, generally rising from low values, to moderate to high values. This “ecological lift” forms the basis for bank credits that compensate for impacts to wetlands, streams, buffers, and other resources in the service area.

**Table 2\*. Summary of Wetland Functional Assessment Under Existing Conditions Compared to Project Implementation.**

WETLAND FUNCTION	EXISTING CONDITION	WITH PROJECT IMPLEMENTATION
Groundwater Recharge	Low	Moderate to High
Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

\*Snohomish Basin Mitigation Bank MBI, July 2005

Below is a summary of wetland functions provided at the SBMB, broken down by category:

### Hydrology

The SBMB provides flood storage and the desynchronization of flood flows for the Snoqualmie River as well as erosion and shoreline protection through the reduction of peak flows and attenuation of storm water runoff rates to the lower Snohomish Basin. Groundwater recharge to the hyporheic zone of the Snoqualmie River occurs from slowing storm water runoff and flood

flows and detaining it in the low lying riverine and depressional wetlands at the SBMB. Additionally during high flows in the Snoqualmie River, the SBMB wetlands collect and retain sediment and reduce sediment transfer rates to the lower watershed.

### **Water quality**

The SBMB wetlands filter heavy nutrient loads, chemical contaminants and heavy metals from storm water runoff, road runoff and agriculture activities upstream from the bank site. Given the bank's landscape position, the wetlands at the SBMB act as a natural filter for surface water flows that enter the bank site upstream and eventually exit into the Snoqualmie River and Pearson Eddy. Water quality testing conducted in June of 2009 for microbiological, demand and nutrient loads showed a significantly reduced level of Fecal Coliform and Total Nitrogen Loads discharged from the bank site compared to samples taken from flows entering the bank site upstream and from the surrounding drainage ditches (*AmTest Laboratories SBMB project June 2009*).

### **Wildlife Habitat**

The SBMB project encompasses a large area with varying aquatic and terrestrial habitat types. Floodplain upland, aquatic bed, emergent, shrub and forested wetlands create a mosaic of habitat types and structural diversity throughout the site. Restoration activities have improved food chain support and species richness, providing habitat for fish, amphibians, mammals and birds. To illustrate the level of habitat connectivity achieved at the bank site, large mammals such as elk, deer and bear have been observed using the site as a connective corridor to their higher elevation habitat areas.

The SBMB is also providing off channel rearing and refuge for juvenile salmonids during high flows in the main stem of the Snoqualmie River. According to the 2005 Snohomish River Basin Salmon Conservation Plan, the lack of rearing and refuge habitat on the main stem of the Snoqualmie River is a limiting factor for juvenile salmonids. Fish presence surveys were conducted in 2013 to study and document what fish species are using the SBMB at different points of the year. Survey results indicate that juvenile Coho and Chinook use the bank for the majority of the year to forage and seek refuge off the mainstem of the Snoqualmie River. Additionally, cutthroat and rainbow trout were documented in the bank site presumably for the same reasons (SBMB Stream Habitat Survey Report 2013)

### **Pre and Post Construction Site Conditions**

Below is a table of existing and proposed conditions at the SBMB following construction of each phase of the bank site. Table 3 shows the area of expected wetland hydrology restored in each phase. The SBMB will restore 135.4 acres of Category II wetlands to the national wetland inventory. Table 4 shows the mix of different habitat types restored to the site from the current condition in acres and length of stream restoration in linear feet.

RESTORATION PHASE	Existing Conditions (acres)			Proposed Conditions (acres)		
	Effectively Drained Wetlands and Other Uplands	Farm Wetland	Total	Wetland	Upland	Stream and Riparian
Phase 1	36.4	4.4	40.8	21.6	19.2	0
Phase 2	96.2	18.8	115.0	99.9	15.1	0
Phase 3	41.8	1.4	43.2	32.7	8.4	2.1
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>154.2</b>	<b>42.7</b>	<b>2.1</b>

HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectivel y Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
Perimeter Buffer	0	0	0	5.9	5.3	10.8	22.0
Floodplain Upland	0	0	0	15.3	12.0	2.9	30.2
Forested Wetland	0	0	0	6.8	14.4	4.7	25.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	13.5	38.1
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	11.3	79.5
Aquatic Bed Wetland	0	0	0	0.2	3.1	0	3.3
Pasture	174.4	24.6	199.0	0	0	0	0
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>40.8</b>	<b>115.0</b>	<b>43.2</b>	<b>199.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400l f	9000lf

\*Snohomish Basin Mitigation Bank MBI 2005

### Monitoring and Reporting

Section 12.0 of the SBMB MBI details Monitoring, Reporting, and Remedial Actions including as-built reports for each phase of construction; annual monitoring reports that document the condition of the SBMB and its progress toward achieving goals, objectives, and performance

standards; monitoring of hydrology and the functioning of relocated streams and drainages; and vegetation survival monitoring. Monitoring report content and schedules are prescribed.

Specific methodology for monitoring is correlated to the various performance standards. For example, permanent monitoring wells will be used to determine presence of wetland hydrology during years 3, 5, and 7 for Performance Standard 2B. Wetland delineation will be conducted in years 7 and 10 to satisfy Performance Standard 2E. Permanent vegetation plots will be used in years 3, 5, 7, and 10 to assess plant density and percent survival to satisfy Performance Standards 4B through 4I. Methodology and reports are submitted and reviewed by the IRT. If the bank is successful in achieving its performance standards, the associated credits for those performance standards are released.

## 8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

NA

## 9. Proposed Mitigation Credits

The Snohomish Basin Mitigation Bank will provide 3.06 mitigation credits under this Bank Use Plan. Wetland mitigation is provided at a 1:1 area ratios for Category III wetlands and a 1.2:1 ratio for Category II wetlands for the project mitigation requirements. At the recommendation of WADOE, Category II paper fill impacts will be mitigated at a 0.5:1 ratio. The credit calculation is as follows:

**Table 6: Mitigation Bank Credits Proposed for Use by Impact Project**

Wetland Identifier	Wetland Class	Wetland Area (acres)	Credit:impact ratio	Total Credits Required for Impact
Wetland A	II	0.328 acres	1.2:1	.394
Wetland B	III	0.440 acres	1:1	.440
Wetland C	III	0.200 acres	1:1	.200
Wetland D	II	0.741 acres	1.2:1	.889
Wetland J	III	0.020 acres	1:1	.020
Cat II Paper Fill	II	2.240 acres	.5:1	1.120
<b>Total</b>		<b>1.719 acres-wetland fill 2.240 acres-paper fill</b>		<b>3.06</b>

## 10. Credit Purchase or Transfer Timing

The applicant will enter into a Purchase Agreement with the representative of the Snohomish Basin Mitigation Bank, Mitigation Banking Services LLC., for 3.06 mitigation credits that would appropriately mitigate for the proposed project impacts. Purchase of credits will be completed prior to the applicant's construction activities occurring and as a condition of the applicant's permit issuance. Nothing in the mitigation credit Purchase Agreement shall be

interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.

**REVISED MITIGATION BANK USE PLAN  
COSTCO LAKE STEVENS AND & CITY OF LAKE STEVENS  
24<sup>TH</sup> STREET EXTENSION PROJECT**

**NWS-**

**April 6, 2020- Sewall Wetland Consulting, Inc.**

**For:**

**Peter Kahn**

**Costco Wholesale**

**999 Lake Drive**

**Issaquah, Washington 98027**

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This project is located on a 39.09 acre site including Parcels #00457000002102, 2201, 2304, 2401, 2501, 2502 & 2503, located west of SR 9 in the City of Lake Stevens, Washington. The project includes the construction of a Costco Warehouse with associated infrastructure, as well as the City of Lake Stevens extension of SE 24<sup>th</sup> Street through the site and improvements to SR9 at the intersection of SR9 and Lake Stevens Road. The project would fill all or part of 7 wetlands resulting in a total of 1.72 acres of wetland fill.

A total of 1.72 acres of Category II (46,592sf/1.07 ac) and Category III (28,311sf/0.65ac) will be impacted by the project. In addition, 2.23 acres of wetland will be impacted as “paper fill” to provide a 220’ buffer as requested to mitigate for road construction impacts to Wetlands A & D.

Wetland D, a Category II wetland will be impacted with 32,292sf (0.74 ac) of fill for the project. Following consultation with the Tulalip Tribes of Washington, Costco is proposing 19,824sf (0.45ac) of voluntary wetland creation along Wetland D, due to its contribution to an off-site fish bearing stream’s hydrology. Costco’s voluntary wetland creation is not being included in its wetland mitigation credit calculations. As a result, for permitting purposes, all wetland impacts and paper fill impacts will be compensated for through bank credit purchase ignoring the actual wetland creation in Wetland D.

## **2. Existing Conditions of Wetlands and Buffers**

### **Uplands**

With the exception of two single family residences on the eastern side of the site, the majority of the site is forested with both deciduous and coniferous forest. The site contains undulating topography with a topographic high on the northeast and a low on the southwest. The central area of the site to the north and west of the existing homes show evidence of past use as a gravel or borrow pit. Cut slopes, and obvious excavations are present in this area. Chain link fences

surround portions of this area as well as dense thickets of Himalayan blackberry. An old trench-like logging road runs diagonally through the site, and several excavated ditches are present in the wetlands on the south end of the site.

The site is primarily forested with coniferous species (douglas fir, western red cedar and western hemlock) with the exception of the wetlands and some alder/big leaf maple dominated areas near the center and periphery of the site. Understory species include vine maple, Indian plum, hazelnut, sword fern, salal, elderberry, stinging nettle and Himalayan and cut leaf blackberry.

Soil pits excavated throughout the upland areas of the site generally revealed a gravelly loam soil with colors ranging from 10YR 3/3-10YR 3/6 which were dry.

### Streams

Mosher Creek is present on the western side of the site and west of the proposed 24th Street road extension. Mosher Creek is a fairly pristine channel in this area with a width between OHWM of 8'-10' and a mix of sand and mud bottom substrates. No fish were observed in this stream, but as noted in The Watershed Report, there are no obvious barriers to fish passage and as a result it is presumed to be a fish bearing, or Type F water. No impacts to this stream are proposed.

### Wetlands

A total of five (5) wetlands were identified for impacts in the project area as detailed below in Table 1;

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J	5	5	6	16	III

Below is a brief description of the wetlands with proposed impacts;

#### *Wetland A*

Wetland A is located on the southeast corner of the site and contains emergent, scrub shrub and forested wetland classes. It is depressional in character. Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 6 for habitat. This indicates a Category II wetland.

### *Wetland B*

Wetland B is located on the southeast portion of the site north of Wetland A . This wetland is dominated by both forested and scrub shrub vegetation with black cottonwood, sitka and pacific willow, crabapple, vine maple and lady fern present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 17 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland B has, would have a 65' buffer for high intensity land use.

### *Wetland C*

Wetland C is located just north of Wetland B and is dominated by a forested wetland class containing black cottonwood, sitka and pacific willow, hardhack and reed canary grass present.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 19 points with 4 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a low habitat score as Wetland C has, would have a 65' buffer for high intensity land use.

### *Wetland D*

Wetland D is located on the south side of the site. This large wetland contains areas of forested, scrub shrub, emergent and aquatic bed wetland classes.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 20 points with 7 for habitat. This indicates a Category II wetland. Per LSMC 14.88.830 Table 14.88-II, Category II wetlands have a buffer that ranges from 45-190 feet depending on the habitat score. Category II wetlands with similar habitat score as Wetland D has, would have a 95' buffer for high intensity land use.

### *Wetland J*

Wetland J is a portion of an old dug ditch that has developed wetland characteristics. This ditch appears to have been dug historically to drain a portion of Wetland D, but the connection to Wetland D is not wetland, just a dry ditch.

Using the 2014 WADOE Wetland Rating system and rating the wetland as a depressional wetland, this wetland scored a total of 16 points with 6 for habitat. This indicates a Category III wetland. Per LSMC 14.88.830 Table 14.88-II, Category III wetlands with a habitat score of 6 would have a 95' buffer for high intensity land use.

## **3. Avoidance and Minimization of Wetland Impacts**

Wetlands A, B, D and J are located within areas that will be impacted by the extension of 24<sup>th</sup> Street East and the connection of Lake Stevens Road. These impacts cannot be avoided and still extend these roads.

Portions of Wetlands B, C, D & J would be impacted by the Costco development and its associated parking area and infrastructure. There is no way to fit the facility on the site without impacts to these wetlands.

#### 4. Unavoidable Wetland Impact Acreage

A total of 1.72 acres of wetland will be filled by this project. As previously mentioned, 0.45 acre of wetland will be created along Wetland D to provide future potential off channel fish habitat. In addition, Costco has voluntarily agreed to off-site mitigation for improving fish habitat through the removal/ replacement of 6 downstream culverts. Costco is not requesting mitigation credit for either the Wetland D creation or the off-site fish passage improvements.

All wetland impacts including paper fill impacts based upon a WADOE 220’ buffer for Wetlands A and D will be mitigated through credit purchase. This leaves a total of 1.72 acres of wetland to be mitigated through credit purchase in the bank for actual fill, and 2.23 acres of “paper fill” of wetland to function as buffer..

**Example Table 2**  
**Expected Impacts to Wetlands not compensated by on-site creation**

Wetland Identifier	Wetland Area (acres)	Permanently Filled Wetland Area (acres)	Temporarily Impacted Wetland Area (acres)	Indirect Impact Area (acres)	Cowardin Classification	Ecology Rating	Local Jurisdiction Rating	HGM Classification
A		0.328	0	0	PEM,PFO	II	II	Depressional
B		0.440	0	0	PSS,PFO	III	III	Depressional
C		0.200	0	0	PFO	III	III	Depressional
D		0.729	0	0	PFO,PSS,PAB	II	II	Depressional
J		0.020	0	0	PSS	III	III	Depressional
<b>TOTALS</b>		<b>1.720</b>	<b>0</b>	<b>0</b>				

#### 5. Impacted Wetland Functions

As indicated by the ratings of the site’s wetlands, functions are moderate to high depending upon the wetland impacted. Stormwater and water functions of these wetlands will be partially mitigated through the sites stormwater system. Other functions will be replaced though off-site mitigation bank purchase.

#### 6. Wetland Mitigation Site Selection Rationale

Compensatory mitigation requirements for the Costco project are intended to replace the temporary and permanent loss of aquatic resource functions caused by the project’s construction activities. The permit applicant will contract with Mitigation Banking Services LLC., which is

the management representative of both the Snohomish Basin Mitigation Bank and the Skykomish Habitat Mitigation Bank. The Costco project is located within the same river basin and service area (Water Resource Inventory Area 7) for both bank projects. The applicant has chosen to use credits from the Snohomish Basin Mitigation Bank (SBMB) which is located on the Snoqualmie River, in the Snoqualmie River Basin in the east half of Section 35 and the west half of Section 36, Township 27 North, Range 6 East, in Snohomish County Washington. The principle objectives of this mitigation bank project are to (1) re-establish and enhance wetland hydrology to a large historical wetland complex along Pearson Eddy which is connected to the Snoqualmie River, (2) restore historical riverine and depressional wetland function and habitat within the wetland and stream channel system (3) re-establish habitat connectivity and fish use of the system by restoring historical stream channels and meander scars across the site, which are hydrologically connected to the Snohomish River (4) remove invasive species on the site and increase the cover and structural diversity of native wetland plant species.

As of the March 2014, the SBMB is fully constructed. The project totals approximately 200 acres of wetland, riparian and upland habitats and is adjacent to additional restoration lands, helping to create a habitat corridor and upland habitat connectivity across the Snoqualmie Valley. The bank project is designed to improve and restore critical habitat for threatened and endangered salmonids within the river basin by reconnecting the main stem of the Snoqualmie River to off-channel rearing and refuge habitat within the bank project. The loss of floodplain connectivity is a limiting factor in this system and the SBMB provides valuable rearing habitat for juvenile Coho and Chinook salmon during outmigration and high flows. Habitat types at the SBMB include forested, shrub, emergent and aquatic bed wetlands, riparian uplands and stream habitat as well as floodplain forested upland habitat.

The SBMB has met all required performance standards applicable to the project for credit release. Given the size and scope wetland restoration and location on the Snoqualmie River the Snohomish Basin Mitigation Bank is the most suitable mitigation bank for the project's compensatory mitigation requirements. Mitigation Banks are the preferred solution for implementing successful compensatory mitigation as they have financial protections and guarantees, strict agency oversight and limit or eliminate temporal loss of wetland functions. For more information about the SBMB contact:

Mitigation Banking Services LLC.

Zach Woodward  
Project Manager  
PO Box 354  
Kirkland, WA 98033  
Phone: 425.205.0279  
Email: zach@mitigationbankingservices.com

### ***Confirmation of Mitigation Credit Availability***

As of August of 2019, the Snohomish Basin Mitigation Bank has 40.19 mitigation credits available for use and transfer. Mitigation credits are provided from the bank to an applicant's

project using the suggested ratios in the table below, as approved by the USACE and Washington State Department of Ecology:

Permanent Resource Impact	Credit to Impact Ratio
Wetland, Category I	Case by case
Wetland, Category II	1.2 to 1
Wetland, Category III	1.0 to 1
Wetland, Category IV	.85 to 1
Critical Area Buffer	1 to 1
Stream	Case by case

Proof of the current number of available mitigation credits at the SBMB site can be confirmed by approving agency(s) through the Interagency Review Team (IRT).

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The Snohomish Basin Wetland Mitigation Bank project has undergone an extensive permitting and review process which involved input and direction from multiple agencies and reviewing groups. Based on work accomplished, credits have been approved and released for sale by the Interagency Review Team (IRT) co-chaired by the US Army Corps of Engineers and the Washington State Department of Ecology. The site development plan for the SBMB is detailed in the bank’s Mitigation Banking Instrument (MBI). This plan was prepared in consultation with the IRT and follows specific requirements of Chapter 173-700 WAC for Wetland Mitigation Banks. The following agencies participated in the development of the banking instrument:

- US Army Corps of Engineers, Seattle District

- US Environmental Protection Agency
- Washington Department of Ecology
- Washington Department of Fish and Wildlife
- Washington Department of Natural Resources, Aquatic Resources Division
- Snohomish County
- King County

## ***7. Wetland Functions Provided at Wetland Mitigation Bank***

### **Summary of Wetland functions provided at the SBMB:**

The table below summarizes existing wetland functions and predicts the relative extent of these functions with implementation of the Bank Project. A substantial increase in wetland function is expected to result after project completion, generally rising from low values, to moderate to high values. This “ecological lift” forms the basis for bank credits that compensate for impacts to wetlands, streams, buffers, and other resources in the service area.

**Table 2\*. Summary of Wetland Functional Assessment Under Existing Conditions Compared to Project Implementation.**

WETLAND FUNCTION	EXISTING CONDITION	WITH PROJECT IMPLEMENTATION
Groundwater Recharge	Low	Moderate to High
Groundwater Discharge	Low to Moderate	Moderate to High
Flood Storage and De-synchronization	Moderate	Moderate to High
Shoreline Anchoring and Dissipation of Erosive Forces	Low to Moderate	Very High
Sediment Trapping	Low to Moderate	Moderate to High
Nutrient/Pollutant Retention, Removal, Transformation, and/or Transport	Low	Moderate to High
Food Chain Support	Very Low to Low	Moderate to High
Wildlife and Fish Habitat	Very Low to Low	High to Very High
OVERALL	Low	Moderate to High

\*Snohomish Basin Mitigation Bank MBI, July 2005

Below is a summary of wetland functions provided at the SBMB, broken down by category:

### **Hydrology**

The SBMB provides flood storage and the desynchronization of flood flows for the Snoqualmie River as well as erosion and shoreline protection through the reduction of peak flows and attenuation of storm water runoff rates to the lower Snohomish Basin. Groundwater recharge to the hyporheic zone of the Snoqualmie River occurs from slowing storm water runoff and flood flows and detaining it in the low lying riverine and depressional wetlands at the SBMB. Additionally during high flows in the Snoqualmie River, the SBMB wetlands collect and retain sediment and reduce sediment transfer rates to the lower watershed.

### **Water quality**

The SBMB wetlands filter heavy nutrient loads, chemical contaminants and heavy metals from storm water runoff, road runoff and agriculture activities upstream from the bank site. Given the bank's landscape position, the wetlands at the SBMB act as a natural filter for surface water flows that enter the bank site upstream and eventually exit into the Snoqualmie River and Pearson Eddy. Water quality testing conducted in June of 2009 for microbiological, demand and nutrient loads showed a significantly reduced level of Fecal Coliform and Total Nitrogen Loads discharged from the bank site compared to samples taken from flows entering the bank site upstream and from the surrounding drainage ditches (*AmTest Laboratories SBMB project June 2009*).

### **Wildlife Habitat**

The SBMB project encompasses a large area with varying aquatic and terrestrial habitat types. Floodplain upland, aquatic bed, emergent, shrub and forested wetlands create a mosaic of habitat types and structural diversity throughout the site. Restoration activities have improved food chain support and species richness, providing habitat for fish, amphibians, mammals and birds. To illustrate the level of habitat connectivity achieved at the bank site, large mammals such as elk, deer and bear have been observed using the site as a connective corridor to their higher elevation habitat areas.

The SBMB is also providing off channel rearing and refuge for juvenile salmonids during high flows in the main stem of the Snoqualmie River. According to the 2005 Snohomish River Basin Salmon Conservation Plan, the lack of rearing and refuge habitat on the main stem of the Snoqualmie River is a limiting factor for juvenile salmonids. Fish presence surveys were conducted in 2013 to study and document what fish species are using the SBMB at different points of the year. Survey results indicate that juvenile Coho and Chinook use the bank for the majority of the year to forage and seek refuge off the mainstem of the Snoqualmie River. Additionally, cutthroat and rainbow trout were documented in the bank site presumably for the same reasons (SBMB Stream Habitat Survey Report 2013)

### **Pre and Post Construction Site Conditions**

Below is a table of existing and proposed conditions at the SBMB following construction of each phase of the bank site. Table 3 shows the area of expected wetland hydrology restored in each phase. The SBMB will restore 135.4 acres of Category II wetlands to the national wetland

inventory. Table 4 shows the mix of different habitat types restored to the site from the current condition in acres and length of stream restoration in linear feet.

RESTORATION PHASE	Existing Conditions (acres)			Proposed Conditions (acres)		
	Effectively Drained Wetlands and Other Uplands	Farm Wetland	Total	Wetland	Upland	Stream and Riparian
Phase 1	36.4	4.4	40.8	21.6	19.2	0
Phase 2	96.2	18.8	115.0	99.9	15.1	0
Phase 3	41.8	1.4	43.2	32.7	8.4	2.1
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>154.2</b>	<b>42.7</b>	<b>2.1</b>

HABITAT	Existing Conditions (acres)			Proposed Conditions (acres)			
	Effectivel y Drained Wetlands and Other Uplands	Farmed Wetland	Total	Phase 1	Phase 2	Phase 3	Total
Perimeter Buffer	0	0	0	5.9	5.3	10.8	22.0
Floodplain Upland	0	0	0	15.3	12.0	2.9	30.2
Forested Wetland	0	0	0	6.8	14.4	4.7	25.9
Scrub-Shrub Wetland	0	0	0	4.2	20.4	13.5	38.1
Emergent Wetland (wet meadow, marsh)	0	0	0	8.4	59.8	11.3	79.5
Aquatic Bed Wetland	0	0	0	0.2	3.1	0	3.3
Pasture	174.4	24.6	199.0	0	0	0	0
<b>Total Acres</b>	<b>174.4</b>	<b>24.6</b>	<b>199.0</b>	<b>40.8</b>	<b>115.0</b>	<b>43.2</b>	<b>199.0</b>
Stream Channel (linear feet)	0	0	6400lf	0	6600lf	2400lf	9000lf

\*Snohomish Basin Mitigation Bank MBI 2005

## Monitoring and Reporting

Section 12.0 of the SBMB MBI details Monitoring, Reporting, and Remedial Actions including as-built reports for each phase of construction; annual monitoring reports that document the condition of the SBMB and its progress toward achieving goals, objectives, and performance standards; monitoring of hydrology and the functioning of relocated streams and drainages; and vegetation survival monitoring. Monitoring report content and schedules are prescribed.

Specific methodology for monitoring is correlated to the various performance standards. For example, permanent monitoring wells will be used to determine presence of wetland hydrology during years 3, 5, and 7 for Performance Standard 2B. Wetland delineation will be conducted in years 7 and 10 to satisfy Performance Standard 2E. Permanent vegetation plots will be used in years 3, 5, 7, and 10 to assess plant density and percent survival to satisfy Performance Standards 4B through 4I. Methodology and reports are submitted and reviewed by the IRT. If the bank is successful in achieving its performance standards, the associated credits for those performance standards are released.

## 8. Wetland Functions Not Mitigated at Wetland Mitigation Bank

NA

## 9. Proposed Mitigation Credits

The Snohomish Basin Mitigation Bank will provide 3.044 mitigation credits under this Bank Use Plan. Wetland mitigation is provided at a 1:1 area ratios for Category III wetlands and a 1.2:1 ratio for Category II wetlands for the project mitigation requirements. At the recommendation of WADOE, Category II paper fill impacts will be mitigated at a 0.5:1 ratio. The credit calculation is as follows:

**Table 6: Mitigation Bank Credits Proposed for Use by Impact Project**

Wetland Identifier	Wetland Class	Wetland Area (acres)	Credit:impact ratio	Total Credits Required for Impact
Wetland A	II	0.328 acres	1.2:1	.394
Wetland B	III	0.440 acres	1:1	.440
Wetland C	III	0.200 acres	1:1	.200
Wetland D	II	0.729 acres	1.2:1	.875
Wetland J	III	0.020 acres	1:1	.020
Cat II Paper Fill	II	2.230 acres	.5:1	1.115
<b>Total</b>		<b>1.720 acres-wetland fill 2.230 acres-paper fill</b>		<b>3.044</b>

## **10. Credit Purchase or Transfer Timing**

The applicant will enter into a Purchase Agreement with the representative of the Snohomish Basin Mitigation Bank, Mitigation Banking Services LLC., for 3.044 mitigation credits that would appropriately mitigate for the proposed project impacts. Purchase of credits will be completed prior to the applicant's construction activities occurring and as a condition of the applicant's permit issuance. Nothing in the mitigation credit Purchase Agreement shall be interpreted or construed to permit any activity that otherwise requires a federal, state and/or local permit.

Proof of the mitigation transfer will be provided in the form of a notification letter to the approving agency(s). Upon service of this notification, the mitigation requirement to purchase mitigation credits will be fully satisfied.